

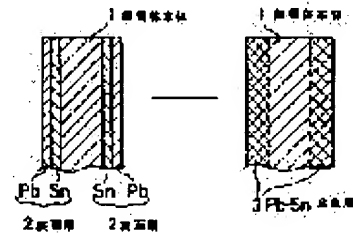
**BEST AVAILABLE COPY****PATENT ABSTRACTS OF JAPAN**(11)Publication number : **04-141955**(43)Date of publication of application : **15.05.1992**

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**H01M 4/68**(21)Application number : **02-261966**(71)Applicant : **SHIN KOBE ELECTRIC MACH CO LTD**(22)Date of filing : **29.09.1990**(72)Inventor : **TERADA MASAYUKI  
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MIURA ASAHIKO****(54) LEAD STORAGE BATTERY****(57)Abstract:**

**PURPOSE:** To improve left over-discharged characteristics by laminating Sn and Pb alternately on a surface of a collector body being mainly made of Pb and heat-treating its surface layer and forming the collector.

**CONSTITUTION:** Sn and Pb are alternately laminated on a surface of a collector body 1 of mainly Pb and its surface layer 2 is heat-treated and the collector is formed. That is, after the surface layer 2 is formed by alternate plating of Sn and Pb on the surface of the collector body 1 made of Pb-Ca-Sn alloy, in which Pb is a main component, a plate being made using the collector, on which a Pb-Sn alloy 3 layer is formed by heat treatment, a lead storage battery is assembled and electrolyte being added by Mg<sup>2+</sup> is poured. In this case charging current increases when both laminating plating and Mg<sup>2+</sup> addition are used. Sn and Pb being laminated alternately on the surface of the collector being mainly made of Pb and the surface layer being heat-treated, destruction of the surface layer is prevented, and such collector surface as being uniform in Sn concentration can be obtained by forming the surface into Pb-Sn alloy. Thereby it is possible to obtain a lead storage battery which has improved in reliability of left over-discharged characteristics.

**LEGAL STATUS**

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